

AMENDMENT TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application.

1-13. (cancelled).

14. (currently amended) A method for selecting a compound that modulates an activity of an ~~alpha subunit of~~ an SCN3A sodium channel comprising:

- (a) contacting a composition comprising ~~the alpha subunit of~~ said SCN3A sodium ion channel protein having the amino acid sequence as set forth in SEQ ID NO:67, wherein the asparagine residue at ~~having~~ amino acid position ~~residue~~ 43 ~~being~~ is deleted or the valine residue at amino acid position ~~residue~~ 1035 ~~being~~ is an isoleucine ~~instead of a valine~~, with at least one test compound;
- (b) assaying the activity of the ~~alpha subunit of the~~ sodium ion channel in the presence of the test compound;
- (c) comparing the activity of the ~~alpha subunit of the~~ sodium ion channel in the absence of the at least one test compound;
- (d) selecting a compound that modulates the activity of the ~~alpha subunit of the~~ sodium ion channel as compared to the activity in the absence of the at least one test compound.

15-34 (cancelled).

35. (previously presented) The method of claim 14, wherein the method is used for selecting a compound capable of reducing voltage-gated ion channel activity.

36. (previously presented) The method of claim 14, wherein the at least one test compound is a library of test compounds.
37. (currently amended) The method of claim 14, wherein the ~~alpha-subunit of said~~ SCN3A sodium ion channel protein is encoded by an expression vector.
38. (previously presented) The method of claim 37, wherein the expression vector is comprised in a cell.
39. (previously presented) The method of claim 14, wherein the assaying is performed with a whole cell.
40. (previously presented) The method of claim 14, wherein the sodium ion channel activity is:
- (i) voltage dependence activation;
 - (ii) voltage dependence of steady state level of inactivation;
 - (iii) time course of inactivation;
 - (iv) the number or fraction of channels available for opening;
 - (v) change in current;
 - (vi) flux of ions through the channel;
 - (vii) phosphorylation of channel;
 - (viii) binding of molecules to the channel; or
 - (ix) induction of a second cellular messenger.

41. (previously presented) The method of claim 40, wherein the flux of ions through the channel is assessed by:
- (i) fluorescence resonance energy transfer (FRET)-based voltage sensor assay;
 - (ii) dibasic dyes;
 - (iii) ^{14}C -guanidine;
 - (iv) two electrode voltage clamp; or
 - (v) patch-clamp.
42. (previously presented) The method of claim 40, wherein the binding of molecules to the channel is assessed by surface plasmon resonance.
43. (previously presented) The method of claim 14, wherein the method is used for selecting a compound which reduces the hyperexcitability state of the SCN3A ion channel.
- 44.-47. (cancelled)